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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,569	11/12/2003	Iqbal Ahmed	5003073.034US1	6659

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EXAMINER	
LEE, RIP A	

ART UNIT	PAPER NUMBER
1713	

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08/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/706,569	AHMED ET AL.	
	Examiner	Art Unit	
	Rip A. Lee	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-6,8-10,14,15,17-19 and 29-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-6, 8-10, 14, 15, 17-19 and 29-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This office action follows a request for continued examination (RCE) under 37 § C.F.R. 1.114, filed on June 19, 2007. Claims 3-6, 8-10, 14, 15, 17-19, and 29-31 remain pending.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 3-6, 8, 9, and 29-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 29 recites a composition comprising water insoluble inorganic metal compound coated onto the surface of the superabsorbent polymer (see component (*d*)). There appears to be no description in the specification regarding this material.

Claim Rejections - 35 USC § 102 / 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 3-6, 8-10, 14, 15, 17-19, and 29-31 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mertens *et al.* (WO 00/53664; equivalent U.S. 6,620,899) for similar reasons set forth previously.

Mertens *et al.* teaches polyacrylic acid particles (150-850 μm), crosslinked with 0.7 wt % of PEG diacrylate, treated with an aqueous solution of 1,3-dioxolane-2-one and $Al_2(SO_4)_3$, followed by heat treatment (examples 1-6). Examples 7-11 show similar treatment of polyacrylic acid powders which are crosslinked with triallylamine and PEG diacrylate. In comparative examples 8-14, Favor SXM 6860 (commercially available surface-crosslinked polyacrylic acid powder) is treated with ZnOAc, where Ac = acetate, $Al(OAc)_3$, or $Al_2(SO_4)_3$. Example 14 teaches polyacrylic acid crosslinked with methoxy-PEG monomethacrylic acid ester treated with 1,3-dioxolane-2-one/$Al_2(SO_4)_3$. In examples 18 and 19, is $Al_2(SO_4)_3$ is replaced with $AlCl_3$ and $FeCl_3$, respectively. The inorganic salt used in examples 20 and 21 is $Ca(OAc)_2$. The reference is silent with respect to the properties recited in the present claims, but the burden of proof is shifted to the Applicants to establish an unobviousness difference as per *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980) and *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

5. Claims 3-6, 8-10, 14, 15, 17-19, and 29-31 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Inger *et al.* (U.S. 7,157,141).

Example 8 of Inger *et al.* discloses Favor SXM 6565 (commercially available surface-crosslinked polyacrylic acid powder) treated with $Al_2(SO_4)_3$. The reference is silent with respect to the properties recited in the present claims, but the burden of proof is shifted to the Applicants to establish an unobviousness difference as per *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980) and *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

6. Claims 3-6, 8-10, 14, 15, 17-19, and 29-31 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gartner *et al.* (WO 98/49221; equivalent U.S. 6,323,252) for the same reasons set forth in previous office actions.

Gartner *et al.* discloses a composition containing superabsorbent particles contacted with multivalent metal salt and further comprising surface crosslinker (claims 1-18). Examples 18-20 of Gartner *et al.* disclose superabsorbent particles (polyacrylic acid, neutralized, crosslinked with ethoxylated trimethylolpropane triacrylate) surface treated with an aqueous solutions of aluminum ion. Aluminum chloride is the source of aluminum ion for experiments conducted by the inventors (see table II). The reference is silent with respect to the properties recited in the present claims, but the burden of proof is shifted to the Applicants to establish an unobviousness difference as per *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980) and *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

7. Claims 10, 14, 15, and 17-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ganslaw *et al.* (U.S. 4,043,952) for reasons set forth previously.

Ganslaw *et al.* discloses surface treatment of superabsorbent particles with a solution of polyvalent metal ion (example II, table I, entries 1-16). Additional examples using commercially available superabsorbent particles are shown as entries 19, 21, 23, and 25. The polymer of entries 1-16 contains 2 wt % internal crosslinking agent and it has been neutralized (table, column 12: 100 pw of acrylic acid / 2 pw of $Al(OAc)_3$ / 50 of pw KOH). The reference is silent with respect to the properties recited in the present claims, but the burden of proof is shifted to the Applicants to establish an unobviousness difference as per *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980) and *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

8. Claims 10, 14, 15, and 17-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Harada *et al.* (U.S. 5,115,011) for reasons set forth previously.

Harada *et al.* discloses treatment of superabsorbent particles with an aqueous solution of aluminum sulfate, followed by drying of the particles. The synthetic polymer used in the examples is prepared from 74.96 mol % of sodium acrylate, 25 mole % of acrylic acid, and 0.04 mole % of N,N'-methylene*bis*acrylamide (col. 6, lines 41-55). The polymer is treated with aqueous solutions comprising aluminum sulfate (examples 1, 4-8, 10, 20), aluminum chloride (examples 3, 9, 11-13, 16, 25, and 26), calcium chloride (example 14), magnesium chloride (example 15), aluminum acetate (example 27), and aluminum nitrate (example 28). In example 2, the superabsorbent polymer is a starch-acrylic acid graft polymer commercially available as SanWet IM-1000. This material is treated with an aqueous solution comprising aluminum sulfate.

Response to Arguments

9. Applicant's arguments with respect to rejections of claims over Ganslaw *et al.* and Harada *et al.* have been considered fully, but they are not persuasive. While the references do not teach surface crosslinking of absorbent particles, it is noted that claims 10, 4, 15, and 17-19 do not require this feature. Accordingly, the burden remains with Applicant to establish unobviousness with respect to the properties of the prior art products and the properties of the product of the instant claims.

Applicant's examples and declarations have been carefully reviewed. It is clear from the examples that SXM71, SXM77, and SXM880 (surface crosslinked superabosrbent polymer described in declaration under 1.132, filed June 19, 2007) treated with metal ion exhibits the requisite delayed free water absorption. Regarding the applied prior art (Mertens *et al.* and Gartner *et al.*, applicants have submitted experiments showing that SXM 9300 (Stockhausen) treated accordingly fails to exhibit a delayed free water absorption of less than 3.6 g/g polymer/15 sec (see response filed December 11, 2006). It is not clear how the properties

exhibited by the polymer prepared in the separate experiments translate to the properties of polymer of the prior art, and elucidation is requested. Specifically, it would not appear that the sole experiment is representative of the variety of treated crosslinked polymer discloses in Gartner *et al.* That is, it is not understood from the single result of Applicant's experiment how one may draw the conclusion that none of the materials disclosed in Gartner *et al.* would exhibit the claimed delayed free water absorption property. Furthermore, it would appear that Applicant's experiments is not representative of the product in Mertens *et al.* Applicant appears to have surface crosslinked (using 1,3-dioxolan-2-one) a previously surface-crosslinked material (SXM9300). Again, elucidation of the experimental details and how they pertain to unobviousness over the prior art is requested.

In light of this and previous discussion, the rejections have not been withdrawn. In effort to expedite prosecution, the examiner invites and encourages Applicant to discuss these experiments during a personal/telephonic interview.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

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August 27, 2007